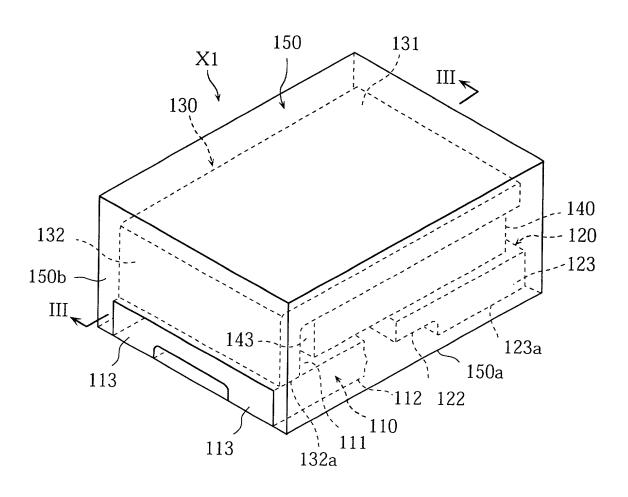
Inventor: KOBAYAKAWA, Masahiko
Docket No.: 10921.112US01
Title. SURFACE-MOUNTING SEMICONDUCTOR DEVICE AND METHOD OF MAKING
THE SAME
Attorney Name: Douglas P. Mueller
Phone No.: 612.371 5237
Sheet 1 of 36

FIG. 1

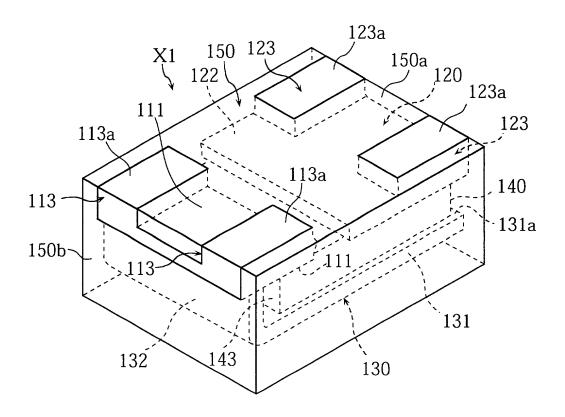


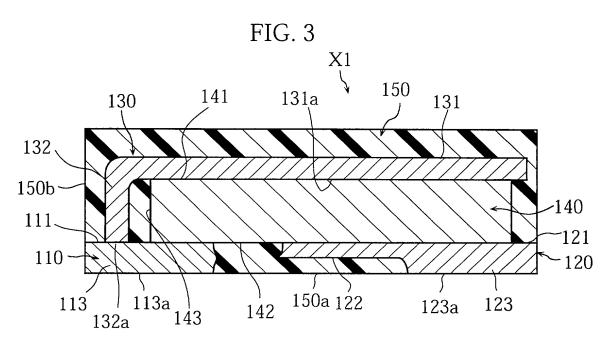
Inventor: KOBAYAKAWA, Masahiko Docket No.: 10921.112US01 Title: SURFACE-MOUNTING SEMICONDUCTOR DEVICE AND METHOD OF MAKING

THE SAME

Attorney Name Douglas P. Mueller Phone No.. 612.371 5237 Sheet 2 of 36

FIG. 2



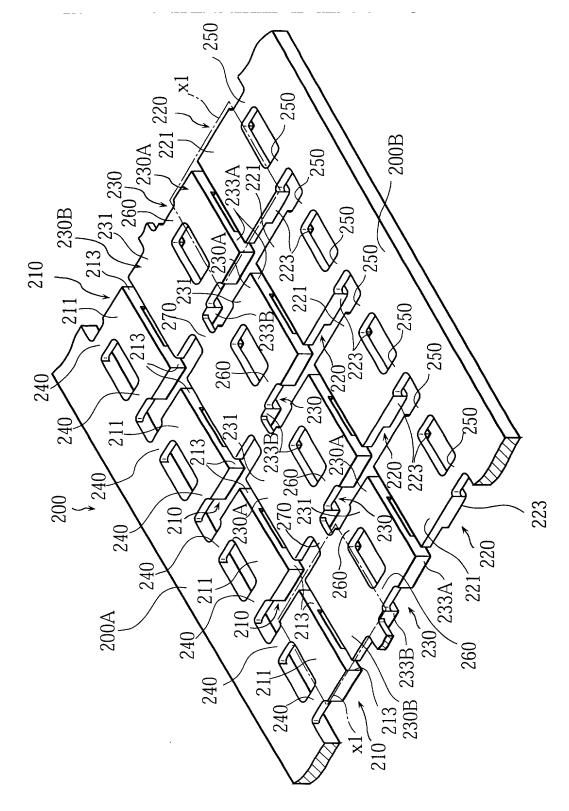


Inventor: KOBAYAKAWA, Masahiko Docket No.: 10921.112US01 Title. SURFACE-MOUNTING SEMICONDUCTOR DEVICE AND METHOD OF MAKING

THE SAME

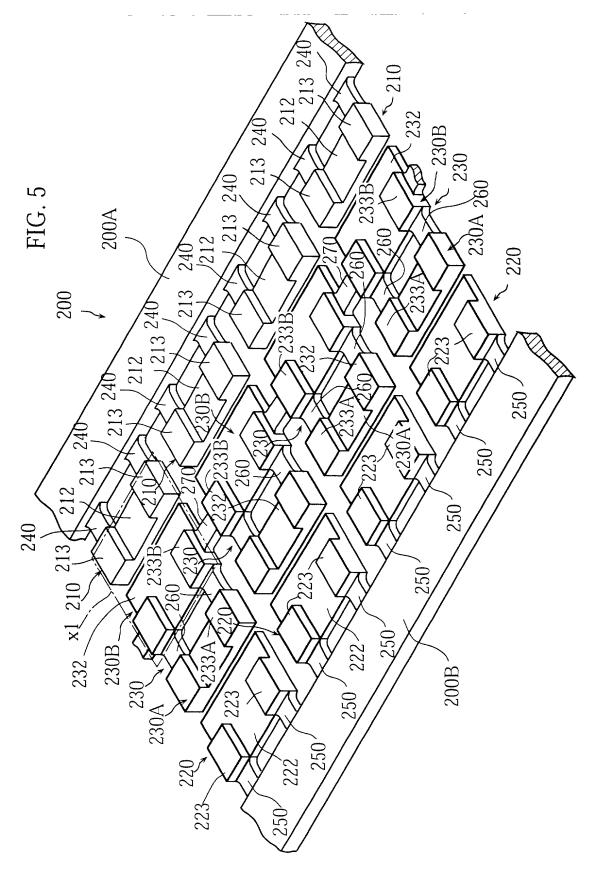
Attorney Name Douglas P. Mueller Phone No: 612.371.5237 Sheet 3 of 36





Inventor: KOBAYAKAWA, Masahiko Docket No.: 10921.112US01 Title: SURFACE-MOUNTING SEMICONDUCTOR DEVICE AND METHOD OF MAKING

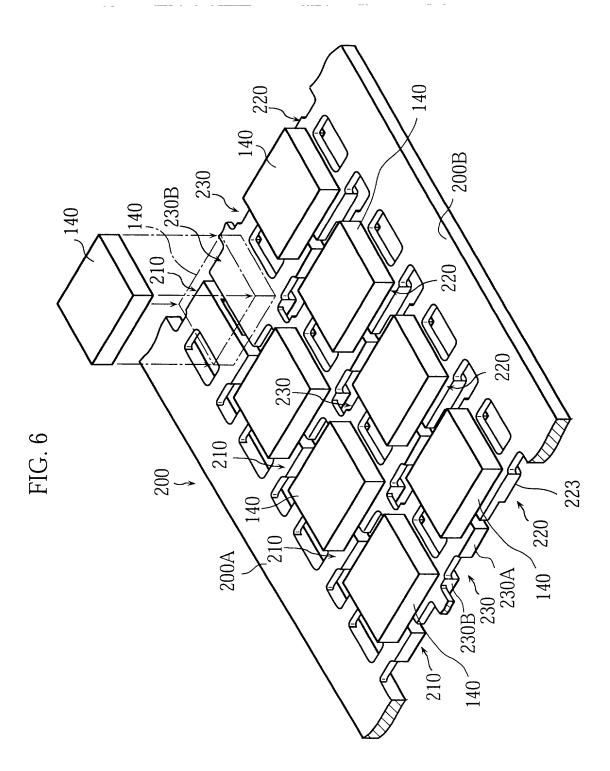
THE SAME
Attorney Name: Douglas P. Mueller
Phone No.. 612.371.5237
Sheet 4 of 36



Inventor: KOBAYAKAWA, Masahiko Docket No.: 10921.112US01 Title: SURFACE-MOUNTING SEMICONDUCTOR DEVICE AND METHOD OF MAKING

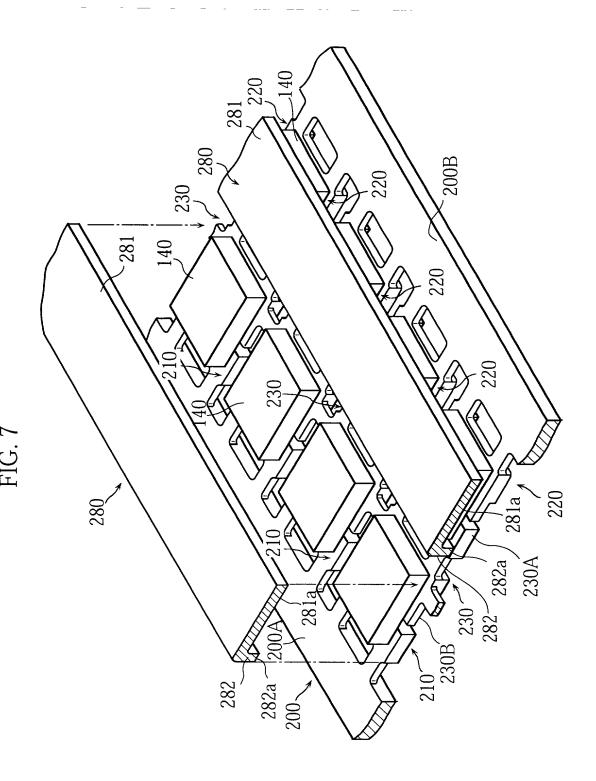
THE SAME

Attorney Name: Douglas P Mueller Phone No.: 612.371.5237 Sheet 5 of 36

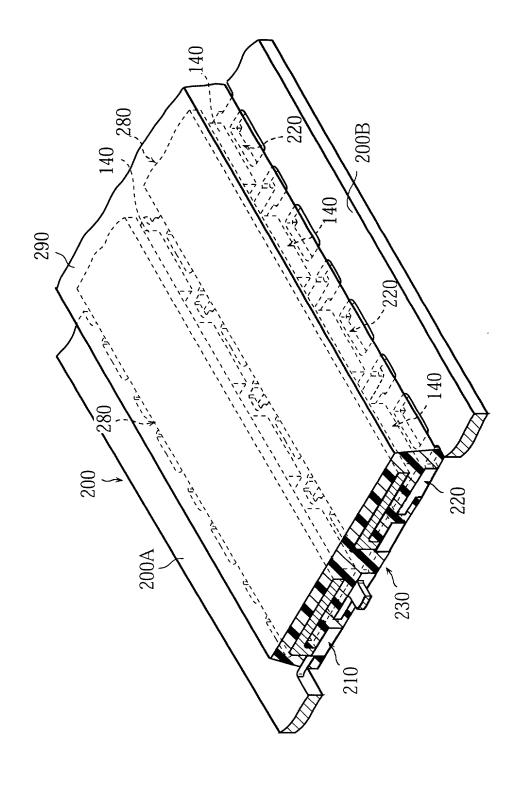


Inventor: KOBAYAKAWA, Masahiko
Docket No.: 10921.112US01
Title: SURFACE-MOUNTING SEMICONDUCTOR DEVICE AND METHOD OF MAKING
THE SAME

Attorney Name. Douglas P. Mueller Phone No.: 612 371.5237 Sheet 6 of 36



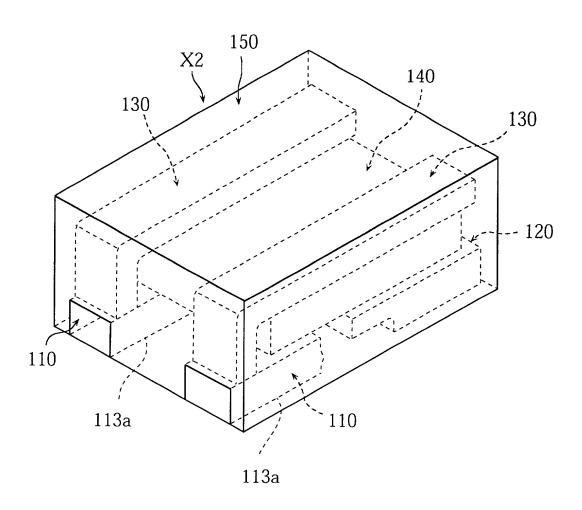
Inventor: KOBAYAKAWA, Masahiko
Docket No.: 10921.112US01
Title: SURFACE-MOUNTING SEMICONDUCTOR DEVICE AND METHOD OF MAKING
THE SAME
Attorney Name: Douglas P. Mueller
Phone No.: 612.371 5237
Sheet 7 of 36



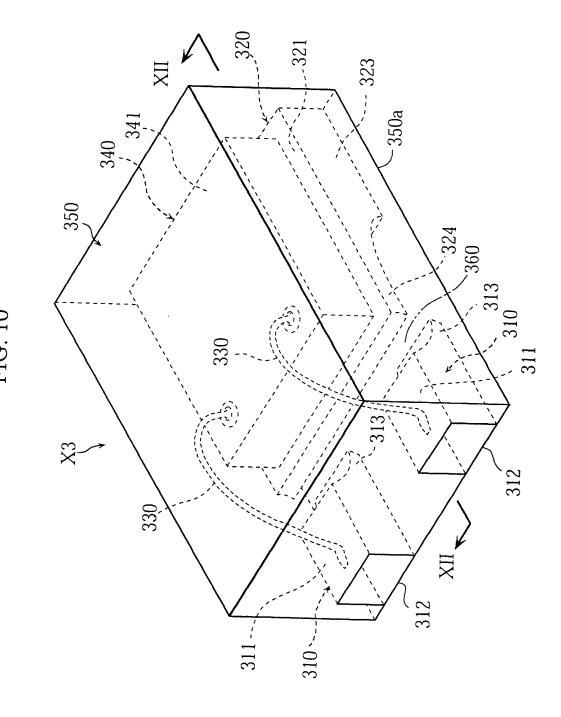
7/36

Inventor: KOBAYAKAWA, Masahiko
Docket No.: 10921.112US01
Title SURFACE-MOUNTING SEMICONDUCTOR DEVICE AND METHOD OF MAKING
THE SAME
Attorney Name: Douglas P Mueller
Phone No.: 612.371.5237
Sheet 8 of 36

FIG. 9



Inventor: KOBAYAKAWA, Masahiko
Docket No.. 10921.112US01
Title: SURFACE-MOUNTING SEMICONDUCTOR DEVICE AND METHOD OF MAKING
THE SAME
Attorney Name Douglas P. Mueller
Phone No.: 612.371 5237
Sheet 9 of 36

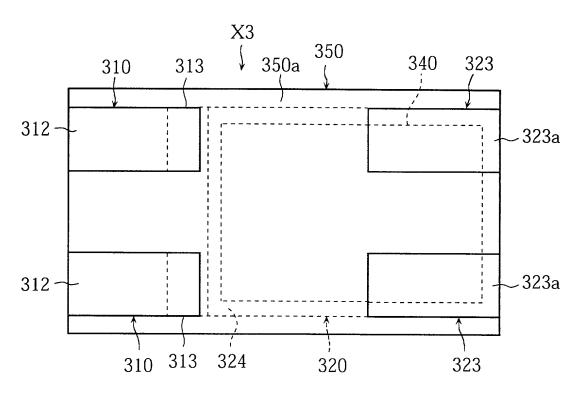


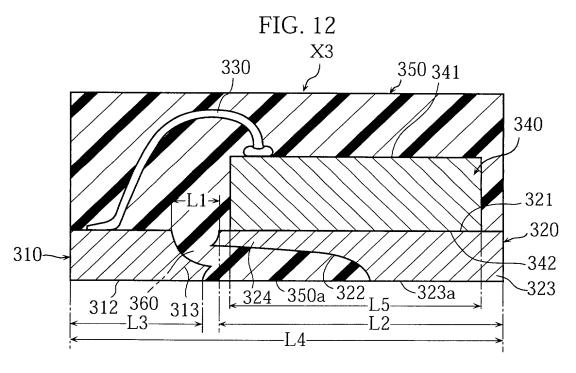
uffer greek given to the tent to the tent of the tent to the tent of the tent 

Inventor: KOBAYAKAWA, Masahiko Docket No.: 10921.112US01 Title: SURFACE-MOUNTING SEMICONDUCTOR DEVICE AND METHOD OF MAKING

THE SAME
Attorney Name: Douglas P. Mueller
Phone No.: 612.371.5237
Sheet 10 of 36

FIG. 11





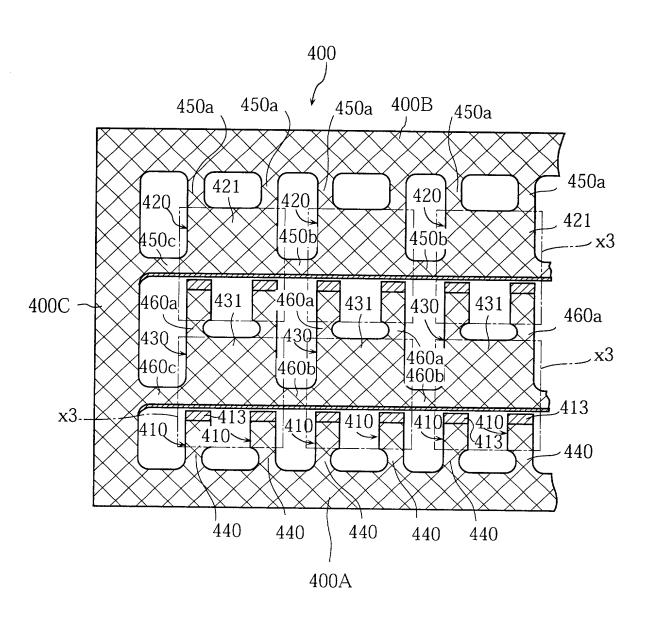
The gain the the pert of

Inventor: KOBAYAKAWA, Masahiko
Docket No.: 10921.112US01
Title: SURFACE-MOUNTING SEMICONDUCTOR DEVICE AND METHOD OF MAKING

THE SAME

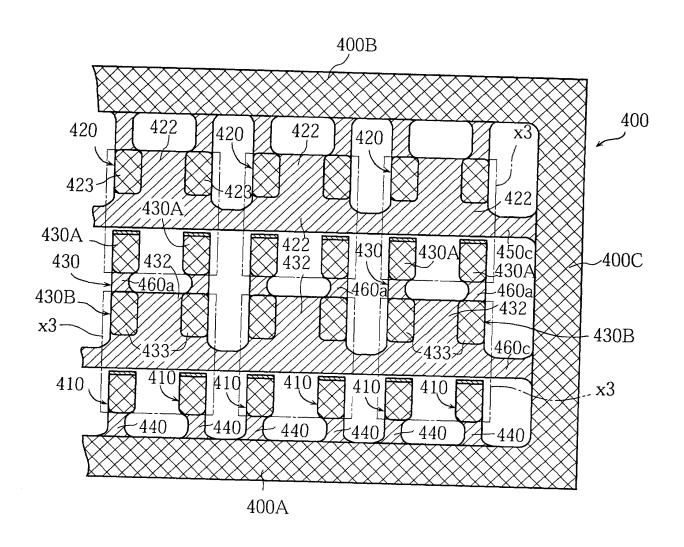
Attorney Name. Douglas P. Mueller Phone No.: 612 371.5237 Sheet 11 of 36

FIG. 13



off the first teat to the other court and the other court and the off the other court and the other court

FIG. 14



Inventor: KOBAYAKAWA, Masahiko Docket No.: 10921.112US01 Title: SURFACE-MOUNTING SEMICONDUCTOR DEVICE AND METHOD OF MAKING

The first state state speed on

Attorney Name: Douglas P Mueller Phone No: 612.371 5237 Sheet 13 of 36



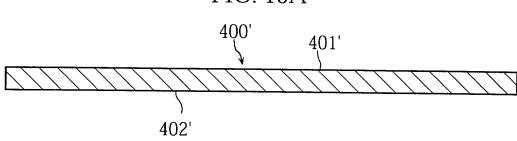


FIG. 15B

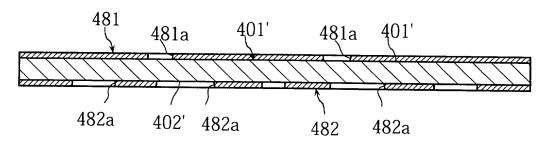


FIG. 15C

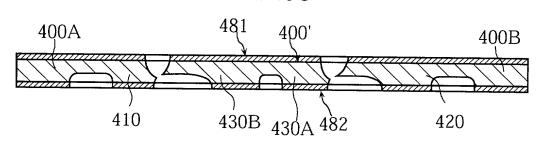
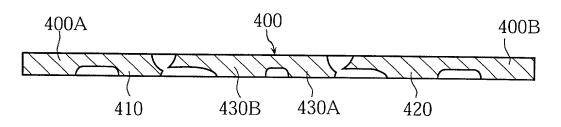


FIG. 15D



THE THE PARTY OF T ļ. 

Inventor: KOBAYAKAWA, Masahiko
Docket No.: 10921.112US01
Title SURFACE-MOUNTING SEMICONDUCTOR DEVICE AND METHOD OF MAKING
THE SAME

Attorney Name: Douglas P. Mueller Phone No.: 612 371 5237

Sheet 14 of 36

FIG. 16

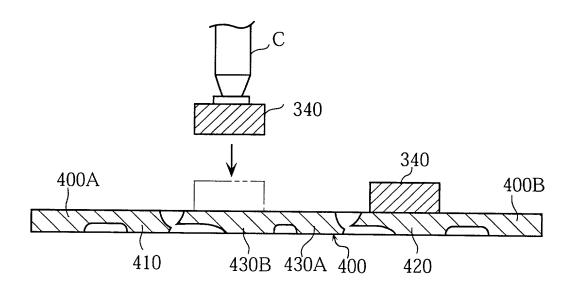
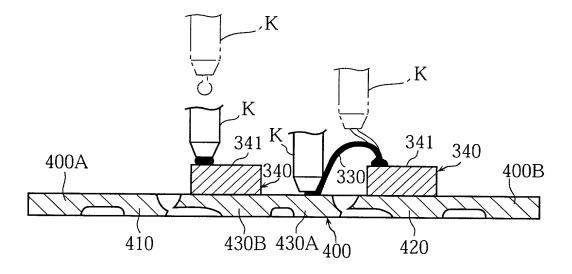
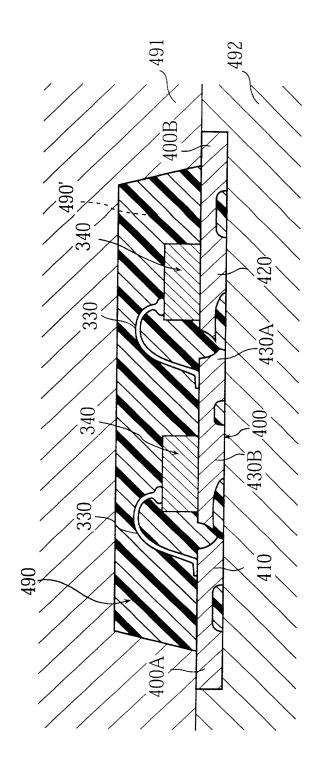


FIG. 17



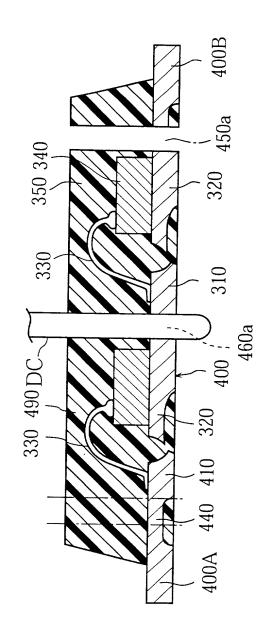
Inventor: KOBAYAKAWA, Masahiko Docket No.: 10921.112US01
Title: SURFACE-MOUNTING SEMICONDUCTOR DEVICE AND METHOD OF MAKING

THE SAME
Attorney Name Douglas P. Mueller
Phone No.: 612.371 5237
Sheet 15 of 36



15/36

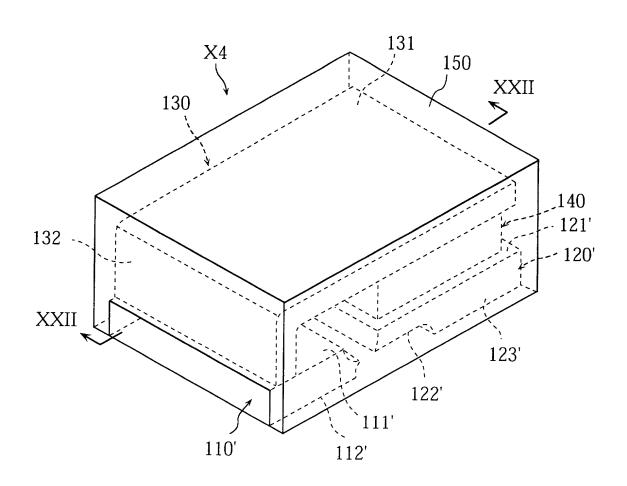
Inventor: KOBAYAKAWA, Masahiko
Docket No. 10921.112US01
Title: SURFACE-MOUNTING SEMICONDUCTOR DEVICE AND METHOD OF MAKING
THE SAME
Attorney Name. Douglas P. Mueller
Phone No.: 612.371 5237
Sheet 16 of 36



Inventor: KOBAYAKAWA, Masahiko
Docket No.: 10921.112US01
Title: SURFACE-MOUNTING SEMICONDUCTOR DEVICE AND METHOD OF MAKING
THE SAME

Attorney Name: Douglas P Mueller Phone No.: 612.371.5237 Sheet 17 of 36

FIG. 20

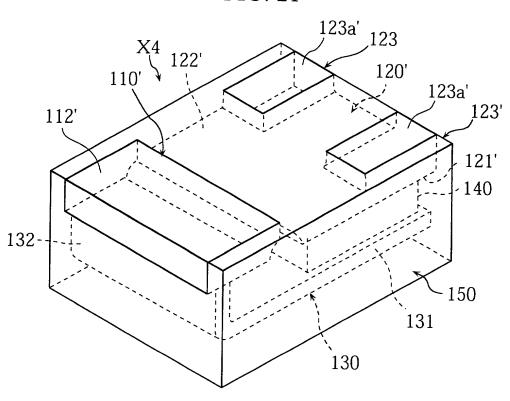


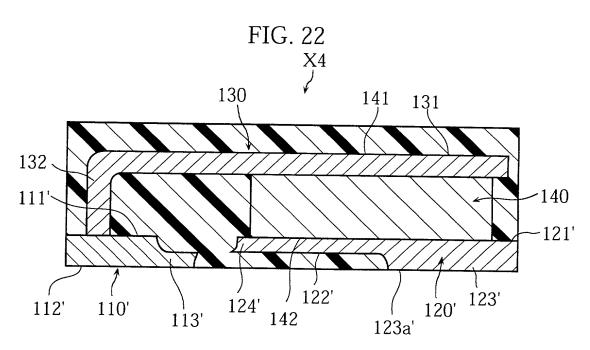
Inventor: KOBAYAKAWA, Masahiko
Docket No.: 10921.112US01
Title SURFACE-MOUNTING SEMICONDUCTOR DEVICE AND METHOD OF MAKING

THE SAME

Attorney Name: Douglas P Mueller Phone No. 612.371.5237 Sheet 18 of 36

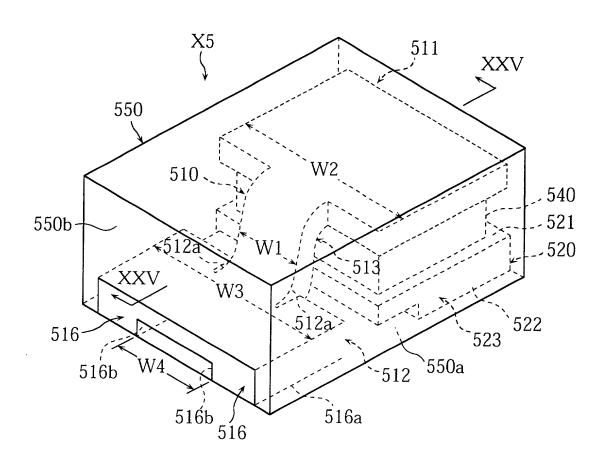
FIG. 21





Inventor: KOBAYAKAWA, Masahiko
Docket No.: 10921.112US01
Title: SURFACE-MOUNTING SEMICONDUCTOR DEVICE AND METHOD OF MAKING
THE SAME
Attorney Name: Douglas P. Mueller
Phone No · 612 371.5237
Sheet 19 of 36

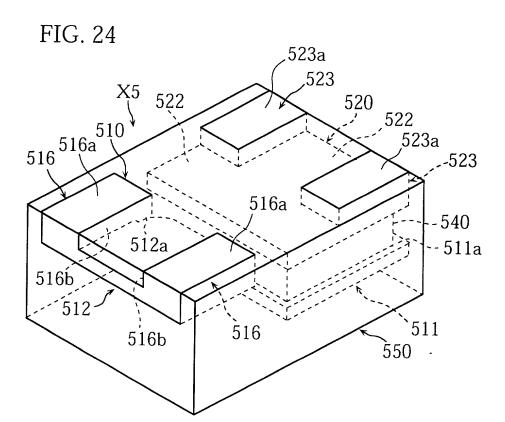
FIG. 23

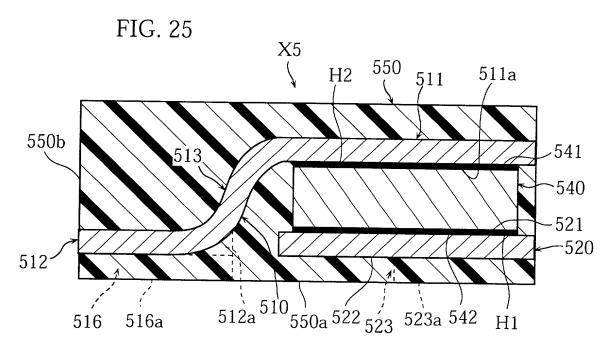


Inventor: KOBAYAKAWA, Masahiko Docket No.: 10921.112US01 Title: SURFACE-MOUNTING SEMICONDUCTOR DEVICE AND METHOD OF MAKING

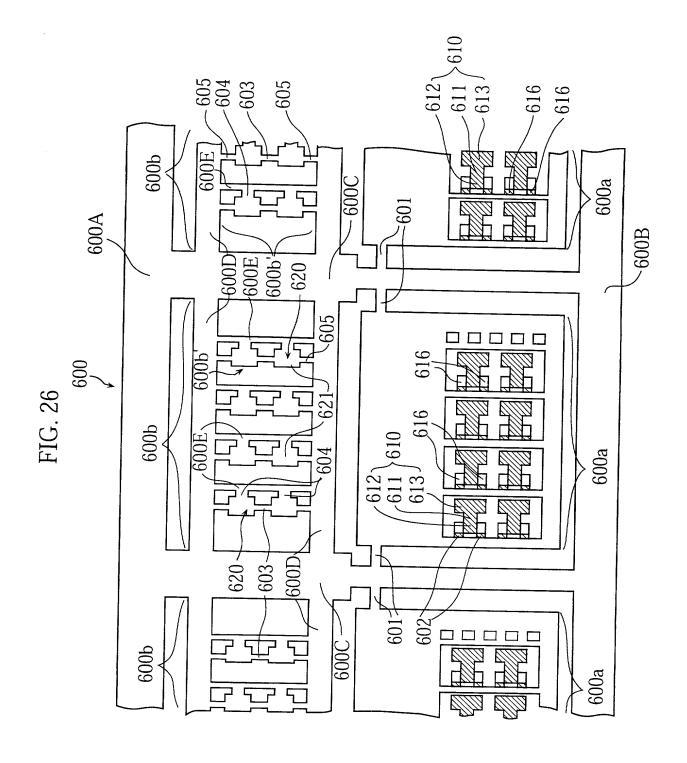
THE SAME

Attorney Name: Douglas P Mueller Phone No.: 612 371 5237 Sheet 20 of 36



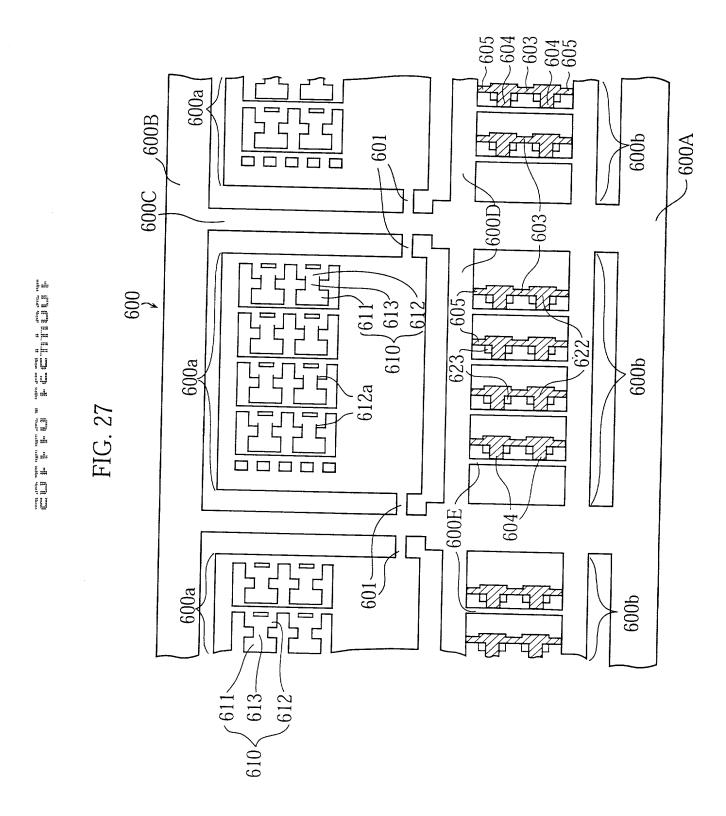


Attorney Name: Douglas P Mueller Phone No.: 612.371.5237 Sheet 21 of 36



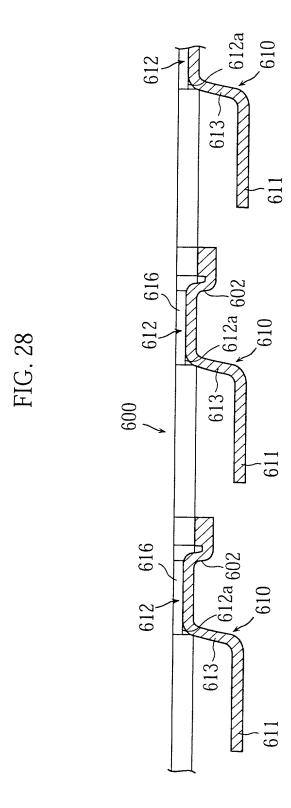
Inventor: KOBAYAKAWA, Masahiko
Docket No.: 10921.112US01
Title: SURFACE-MOUNTING SEMICONDUCTOR DEVICE AND METHOD OF MAKING

Attorney Name. Douglas P. Mueller Phone No.: 612 371 5237 Sheet 22 of 36



Inventor: KOBAYAKAWA, Masahiko
Docket No.: 10921.112US01
Title: SURFACE-MOUNTING SEMICONDUCTOR DEVICE AND METHOD OF MAKING
THE SAME

Attorney Name: Douglas P. Mueller Phone No.. 612 371.5237 Sheet 23 of 36



THE PART OF THE PA

Sheet 24 of 36

601 600a 540

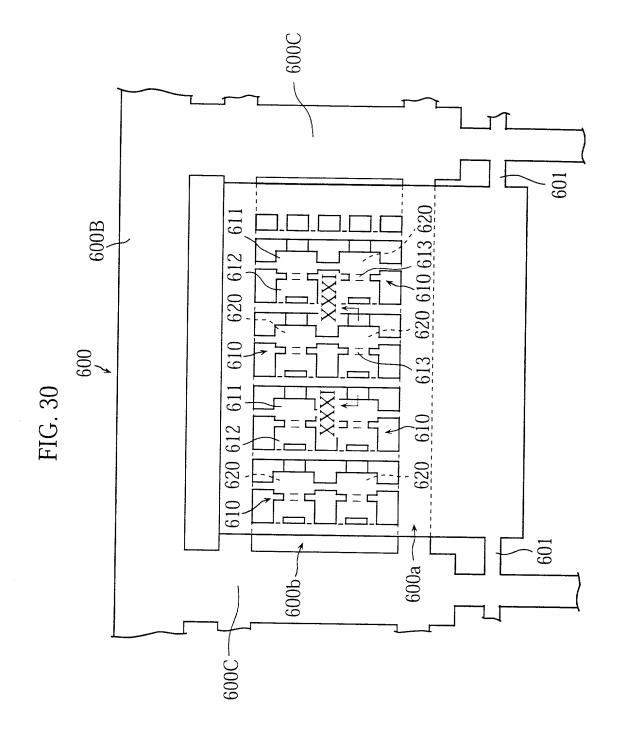
24/36

Inventor: KOBAYAKAWA, Masahiko
Docket No.: 10921.112US01
Title. SURFACE-MOUNTING SEMICONDUCTOR DEVICE AND METHOD OF MAKING
THE SAME

Attorney Name: Douglas P. Mueller Phone No. 612.371 5237 Sheet 25 of 36

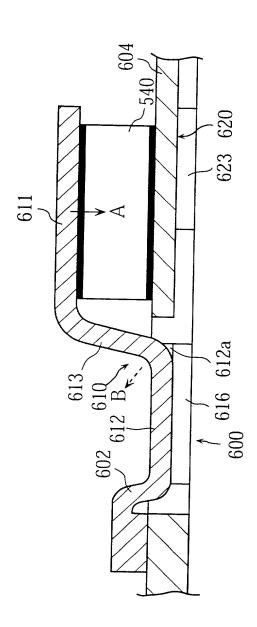
THE THE PARTY OF THE PARTY SERVE

14 ļa The transfer



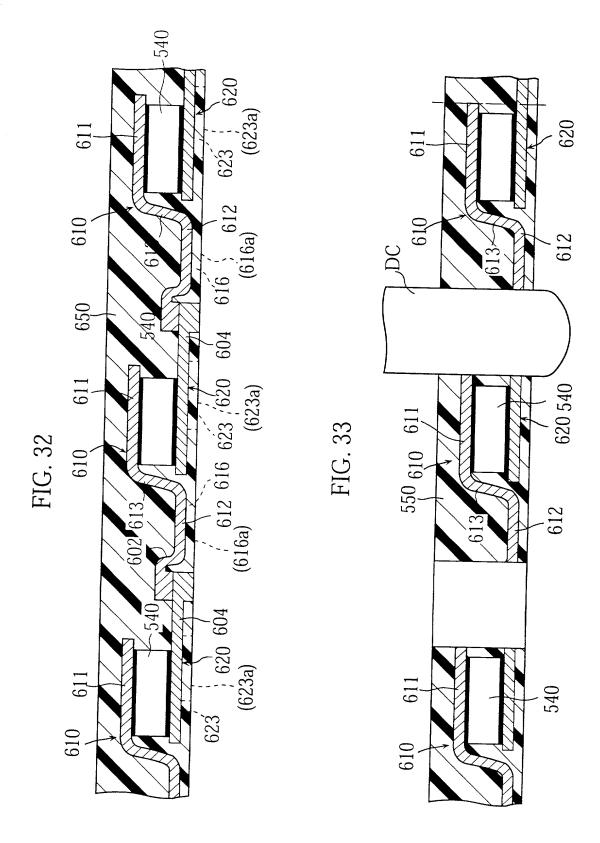
Inventor: KOBAYAKAWA, Masahiko
Docket No.: 10921.112US01
Title. SURFACE-MOUNTING SEMICONDUCTOR DEVICE AND METHOD OF MAKING
THE SAME

Attorney Name: Douglas P. Mueller Phone No: 612 371.5237 Sheet 26 of 36



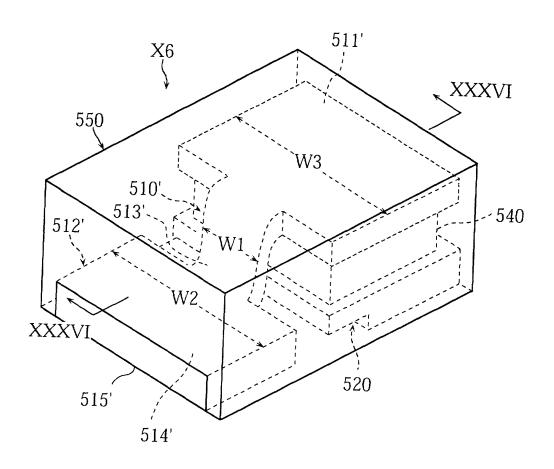
Inventor: KOBAYAKAWA, Masahiko
Docket No.: 10921.112US01
Title. SURFACE-MOUNTING SEMICONDUCTOR DEVICE AND METHOD OF MAKING

Attorney Name Douglas P Mueller Phone No.: 612.371.5237 Sheet 27 of 36



Inventor: KOBAYAKAWA, Masahiko
Docket No.: 10921.112US01
Title: SURFACE-MOUNTING SEMICONDUCTOR DEVICE AND METHOD OF MAKING
THE SAME
Attorney Name: Douglas P. Mueller
Phone No: 612.371.5237
Sheet 28 of 36

FIG. 34



Inventor: KOBAYAKAWA, Masahiko Docket No · 10921.112US01 Title: SURFACE-MOUNTING SEMICONDUCTOR DEVICE AND METHOD OF MAKING THE SAME Attorney Name: Douglas P. Mueller Phone No.: 612.371 5237 Sheet 29 of 36

FIG. 35

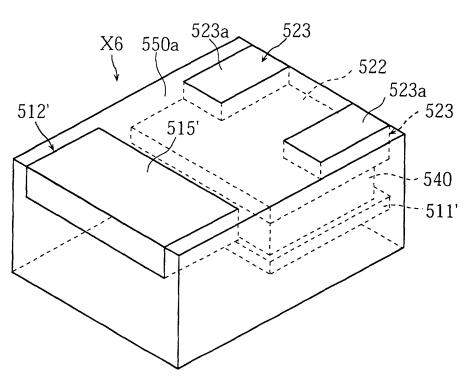
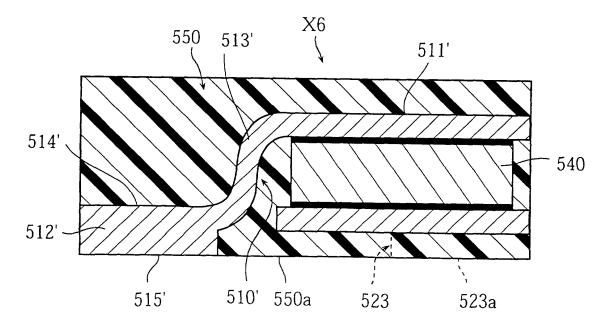
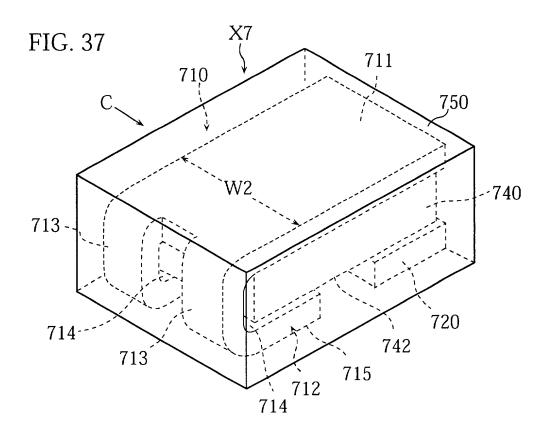


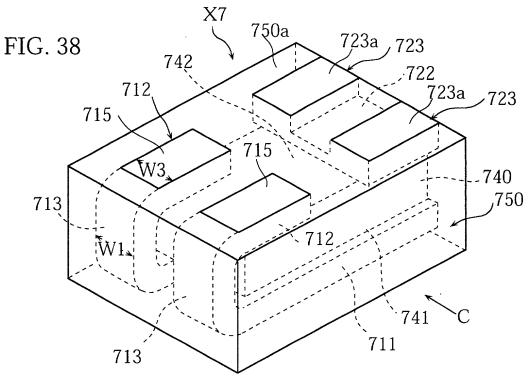
FIG. 36



29/36

Sheet 30 of 36



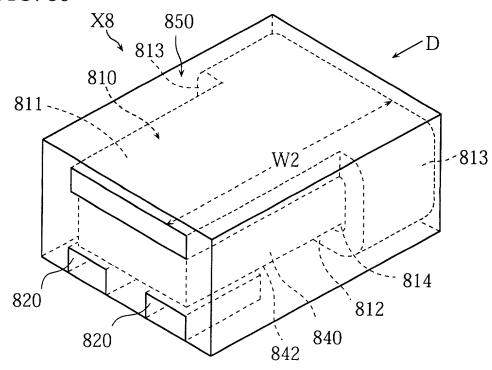


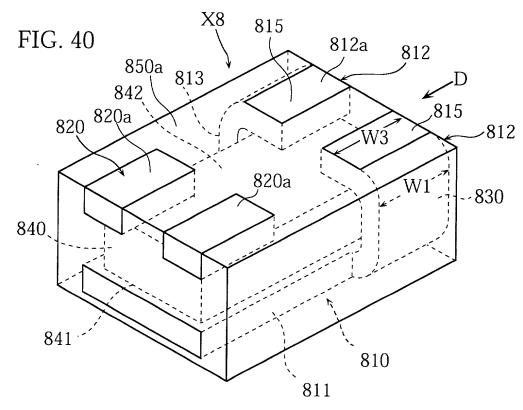
Inventor: KOBAYAKAWA, Masahiko Docket No.: 10921.112US01 Title: SURFACE-MOUNTING SEMICONDUCTOR DEVICE AND METHOD OF MAKING

THE SAME

Attorney Name: Douglas P. Mueller Phone No.: 612.371.5237 Sheet 31 of 36

FIG. 39

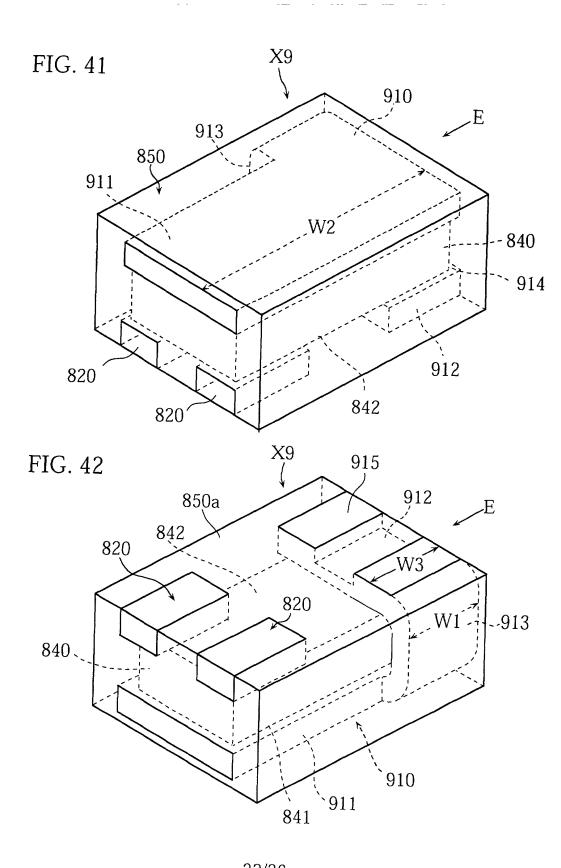




THE SAME

Attorney Name. Douglas P. Mueller Phone No.: 612 371,5237 Sheet 32 of 36



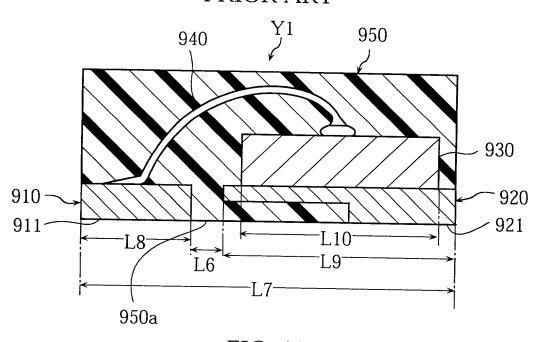


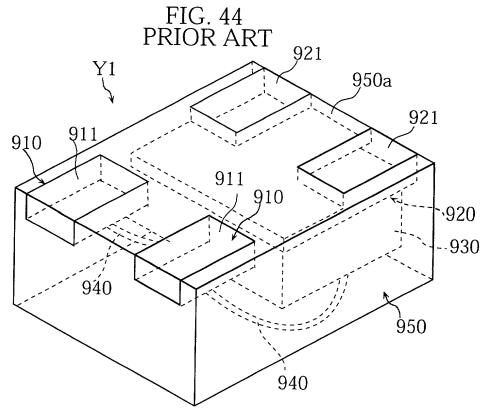
Inventor: KOBAYAKAWA, Masahiko Docket No.: 10921.112US01 Title: SURFACE-MOUNTING SEMICONDUCTOR DEVICE AND METHOD OF MAKING THE SAME

Attorney Name: Douglas P Mueller Phone No.: 612.371.5237

Sheet 33 of 36

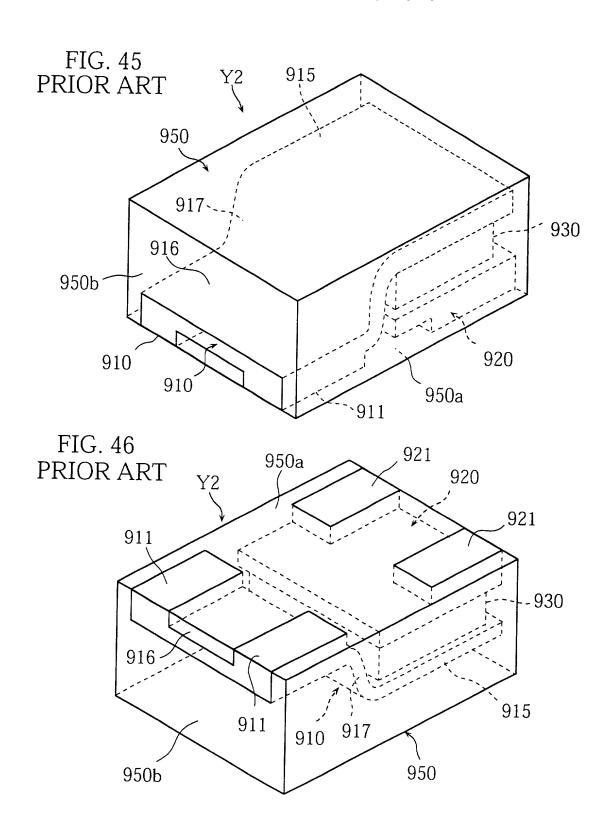
FIG. 43 PRIOR ART





Inventor: KOBAYAKAWA, Masahiko Docket No.: 10921.112US01 Title: SURFACE-MOUNTING SEMICONDUCTOR DEVICE AND METHOD OF MAKING THE SAME

Attorney Name: Douglas P. Mueller Phone No · 612 371 5237 Sheet 34 of 36



ļ.,,

j .4. į iš

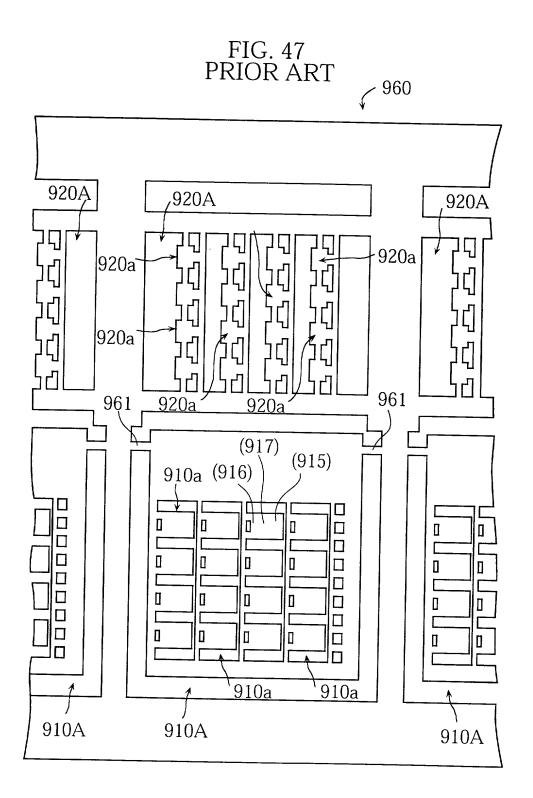
Docket No.: 10921.112US01

Title: SURFACE-MOUNTING SEMICONDUCTOR DEVICE AND METHOD OF MAKING

THE SAME

Attorney Name Douglas P. Mueller

Phone No.: 612.371.5237 Sheet 35 of 36



35/36

Inventor: KOBAYAKAWA, Masahiko
Docket No.: 10921.112US01
Title. SURFACE-MOUNTING SEMICONDUCTOR DEVICE AND METHOD OF MAKING
THE SAME
Attorney Name: Douglas P Mueller
Phone No.: 612.371.5237
Sheet 36 of 36

